

PATENT
Attorney Docket No. 46473.830008.US0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of)	
)	
Johnson, Samuel A.)	
)	Group Art Unit: 3635
Serial No. 10/771,935)	
)	Examiner: LAUX, JESSICA L.
Filed: February 5, 2004)	
)	
For: DEPLOYABLE AND)	
RETRACTABLE SPACE)	
FRAME)	

APPEAL BRIEF

Honorable Commissioner of Patents and Trademarks
Alexandria, VA 22313

Sir:

This is an appeal from the decision of the Examiner mailed on June 19, 2007 finally rejecting claims 1-6 of the above-identified patent application.

REAL PARTY IN INTEREST

The real party in interest in this appeal is S.A. Robotics, as is evidenced by an Assignment filed at Reel 015280, Frame 0861.

RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences that are related to this case.

STATUS OF THE CLAIMS

Claims 1-8 remain in this application.

This appeal is taken from the final rejection of claims 1-6.

No claims are allowed.

Original claims 7 and 8 have been withdrawn.

STATUS OF AMENDMENTS

An Amendment and Response was filed on August 13, 2007 in response to the June 19, 2007 Final Office Action. After consideration, the Examiner submitted an Advisory Action on August 31, 2007, stating that the Amendment and Response did not place the application in condition for allowance or in a better form for appeal by materially reducing or simplifying the issues for appeal. Accordingly, the Amendment and Response filed on August 13, 2007 was not entered. No amendment has been filed subsequent to the Advisory Action mailed on August 31, 2007.

SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is an independent claim, from which claims 2-6 ultimately depend. The preamble of claim 1 is directed to a space frame structure capable of deployment or retraction. Claim 1 recites that the space frame structure is comprised of multiple truss elements 20a-h, multiple beam elements 21 and 24 forming each one of said multiple truss elements 20. (Page 3, lines 5-22, Page 4, lines 1-10, Figures 2, 3a, and 3b)

Claim 1 requires each one of the truss elements to be capable of existing in either a straight and rigid condition (Page 5, lines 7-14, Figure 3c), or existing in a curved and flexible condition (Page 4, lines 19-22, Page 5, lines 1-6, Figure 3b), with opposed ends of said truss elements connected to at least two other structural elements desired to be held spaced apart in a prescribed orientation. (Page 3, lines 5-16, Figure 2)

Claim 1 does not include any means-plus-function limitations pursuant to 35 U.S.C. § 112(6). Dependent claims 2-6 likewise do not contain any means-plus-function limitations pursuant to 35 U.S.C. § 112(6).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. The Examiner rejected claims 1, 2 and 4 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 2, the Examiner takes the position that the term "single beams" was not positively recited as a structural limitation, but rather as a functional intended use.

With respect to claim 4, the Examiner noted that the claims recite "truss elements on one end of the other structural elements are connected, on one end of the structure to an attachment ring and on the other end of the structure to a rotatable ring." The Examiner argues that it is unclear which elements are the 'other structural elements' and which elements are the rings. The Examiner further argues that the specification and drawings are not enabling under 35 U.S.C. § 112, first paragraph, for truss elements connected to other structural elements on opposing ends and also connected to rings. Additionally the Examiner argues that, regarding claims 1 and 4, it is unclear whether each opposed end of the truss elements is connected to at least two other structural elements or one other structural element, and are the multiple truss elements on each end connected to different other structural elements are the same structural elements. Further regarding claim 4, the Examiner argues that "it is unclear what neighboring ones of truss elements is reciting as the claims do not provide structure or structural relationships for neighboring ones of said truss elements,' in such as way as to enable one skilled in the art to understand, know, and use the invention."

B. The Examiner rejected Claims 1-6 under 35 U.S.C. 102(a) as being anticipated by Okazaki et al. (U.S. Patent No. 5,003,736; referred to herein as "Okazaki".) The rejection of claims 2 and 5 are believed to be in error, as the Examiner admits in the subject Final Office Action that claims 2 and 5 contain allowable subject matter. Accordingly, appellant understands

the Examiner's present rejection to apply only to claims 1, 3, 4, and 6, with claims 2 and 5 being rejected as depending from rejected base claims.

ARGUMENT

A. Claims 1, 2 and 4 are patentable under 35 U.S.C. § 112, second paragraph.

Claim 2

The Examiner rejected claim 2 because the term "single beams" was not positively recited as a structural limitation, but rather as a functional intended use. A "hinge" is positively claimed by the limitation "a hinge for connecting said single long beam to one or more single beams . . ." and refers to other structure, positively recited within claim 1 (single long beam and one or more single beams). The limitation provides orientation language with respect to the structures, that being "for connecting." There is no requirement that the structures be positively claimed as being connected. Sufficient detail is provided within the limitation for pointing out and claiming the invention to one of ordinary skill in the art.

In an effort to expedite the prosecution of this matter, or at least simplify the issues for appeal, appellant amended claim 1 in an August 13, 2007 Amendment to change the recitation of "a hinge for connecting said single long beam to one or more single beams . . ." to – a hinge that connects said single long beam to one or more single beams . . . -. The Examiner refused to enter said Amendment, however. Counsel for the appellant verbally requested that the Amendment be entered, during a September 13, 2007 telephonic interview with the Examiner to no avail. The Examiner did state, however, in a September 19, 2007 Interview summary that the amending language was sufficient to overcome the rejection.

Claims 1 and 4

Claims 1 and 4 were rejected by the Examiner because of the limitation, "truss elements on one end of the other structural elements are connected, on one end of the structure to an attachment ring and on the other

end of the structure to a rotatable ring.” The Examiner argues that it is unclear which elements are the ‘other structural elements’ and which elements are the rings. The Examiner further argues that the specification and drawings are not enabling under 35 U.S.C. § 112, first paragraph, for truss elements connected to other structural elements on opposing ends and also connected to rings. Additionally the Examiner argues that, regarding claims 1 and 4, it is unclear whether each opposed end of the truss elements is connected to at least two other structural elements or one other structural element, and are the multiple truss elements on each end connected to different other structural elements are the same structural elements. Further regarding claim 4, the Examiner argues that “it is unclear what neighboring ones of truss elements is reciting as the claims do not provide structure or structural relationships for neighboring ones of said truss elements,’ in such as way as to enable one skilled in the art to understand, know, and use the invention.” Appellant disagrees, stating that a person of ordinary skill in the art will understand the claim language on its own, let alone in light of the supporting specification and accompanying figures.

In an effort to expedite the prosecution of this matter, or at least simplify the issues for appeal, appellant amended claim 4 in an August 13, 2007 Amendment to recite “wherein the other structural elements comprise at least the fixed attachment ring and the rotatable deployment ring.” In that same Amendment, appellant amended the claim term to recite “adjacent.” However, the Examiner refused to enter said Amendment. Counsel for the appellant verbally requested that the Amendment be entered, during a September 13, 2007 telephonic interview with the Examiner to no avail. The Examiner did state, however, in a September 19, 2007 Interview summary that the amending language was sufficient to overcome the rejections.

Claims 1, 2 and 4 are believed to satisfy all requirements of 35 U.S.C. § 112. Accordingly, the Examiner’s rejections should be reversed.

B. Claims 1-6 are patentable under 35 U.S.C. 102(a) over Okazaki et al. (U.S. Patent No. 5,003,736).

Claim 1 is an independent claim from which claims 2-6 ultimately depend. Claim 1 calls for a “space frame structure capable of deployment or retraction comprising multiple truss elements [forming the space frame structure], *multiple beam elements forming each one of the multiple truss element*, and each one of the truss elements being capable of existing in either a straight and rigid condition, or existing in a curved and flexible condition, with opposed ends of the truss elements connected to at least two other structural elements desired to be held spaced apart in a prescribed orientation.” (Emphasis added.)

In an exemplary embodiment, referring to FIGS. 3a and 3b, there is shown multiple beam elements, i.e., central flat beam 21 and outrigger beams 24, forming truss element 20. In FIG. 2, there are shown multiple truss elements, i.e., truss elements 20a-h, forming the space frame structure.

The Examiner argues, incorrectly, that Okazaki discloses a “space frame structure . . . comprising multiple truss elements (the combined structure of elements 3, 5), multiple beam elements (3) forming each one of said multiple truss elements . . . ” Okazaki discloses a single structure with multiple longerons 3. However, even assuming the longerons of Okazaki are equivalent to the multiple truss elements, Okazaki does not disclose *multiple beam elements forming each one of the longerons 3*. To be sure, the individual longerons are single structural elements and are not each not formed from multiple beam elements. Okazaki does not teach or otherwise disclose all of the structural elements, as claimed.

Anticipation under 35 U.S.C. § 102 focuses on the questions of whether or not a claim reads on the product or process disclosed by a prior art reference, not what the reference broadly “teaches.” Kalman v. Kimberly-Clarke Corp., 713 F.2d 760 (Fed. Cir. 1983). “For a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed function must be identically shown in a single reference.” Diversitech Corp. v.

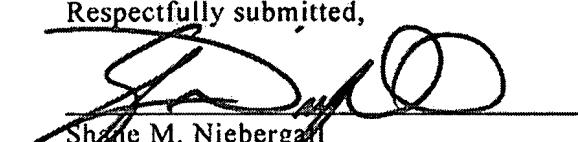
Century Steps, Inc., 850 F.2d 675 (Fed. Cir. 1988); Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference). The differences between the Okazaki structure and that claimed within claim 1 are substantial and significant. Accordingly, claim 1 is believed to be patentably distinct from the prior art. Claims 2-6 each ultimately depend from claim 1 and are believed to be patentably distinct for at least the reasons set forth herein with respect to claim 1.

Request:

Reversal of the Examiner's final rejection of claims 1, 2 and 4 under 35 U.S.C. § 112, second paragraph, and the Examiner's final rejection of claims 1-6 under 35 U.S.C. 102(a) as being anticipated by Okazaki et al. (U.S. Patent No. 5,003,736), is respectfully requested for the above-stated reasons.

Signed this 30th day of October, 2007.

Respectfully submitted,


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CLAIMS APPENDIX

The Claims involved in this Appeal read as follows:

1. A space frame structure capable of deployment or retraction comprising multiple truss elements, multiple beam elements forming each one of said multiple truss elements, and each one of said truss elements being capable of existing in either a straight and rigid condition, or existing in a curved and flexible condition, with opposed ends of said truss elements connected to at least two other structural elements desired to be held spaced apart in a prescribed orientation.
2. The invention of claim 1 wherein said multiple beam elements of each one of said truss elements comprise a single long beam having non-fully constrained end attachment points, and a hinge for connecting said single long beam to one or more single beams which do not have constrained end attachment points, for the purpose of existing in either a straight and rigid condition, or to exist in a curved and flexible condition, depending on the angular orientation of said hinge.
3. The invention of claim 1 wherein said truss elements are comprised of a carbon fibre composite material.
4. The invention of claim 1, wherein neighboring ones of said truss elements on one end of the at least two structural elements are connected on one end of the structure to a fixed attachment ring and on another end of the structure to a rotateable deployment ring, and said truss elements are configured to effect a condition of creating parallel truss pairs when it is desired to collapse the structure, and to likewise create a condition when it is desired to deploy and rigidify the structure by rotation of said deployment ring to triangulate successive truss pairs.
5. The invention of claim 2, wherein the hinge comprises two fabric or membrane like strips of material sewn together to create pockets for the insertion of beam like truss elements, so as to effect a hinge apparatus at a line defined by the sewn seam separating two or more beam like truss elements.
6. The invention of claim 4, wherein provision is made to automate and mechanize the apparatus for automatic deployment or automatic retraction.

7. (Withdrawn) An astronomical telescope structure comprising primary and secondary reflecting mirrors held rigidly separated by a triangulated truss structure, having motional degrees of rotational freedom about a horizontal azimuth axis, and rotational freedom about an orthogonal altitude axis, said telescope having provision for adjustable separation of said primary and secondary mirrors with respect to the altitude rotational axis for the purpose of adjusting the balance point of said telescope structure to coincide with the approximate location of said altitude rotational axis.

8. (Withdrawn) An astronomical telescope structure comprising primary and secondary reflecting mirrors held rigidly separated by a triangulated truss structure, having motional degrees of rotational freedom about a horizontal azimuth axis, and rotational freedom about an orthogonal altitude axis, said telescope having the components one or more tubular metal rings as the bearing surface of said azimuth axis, thereby providing an essential hollow space located therein.

EVIDENCE APPENDIX

Not applicable.

RELATED PROCEEDINGS APPENDIX

Not applicable.